

AMENDMENTS TO THE CLAIMS

Please cancel claims 16-27 without prejudice or disclaimer of their underlying subject matter for the purposes of filing a divisional application.

1. (original) A method for applying light from a light source to a recording medium and detecting the light reflected from the recording medium, the method comprising the steps of:

 diffracting the reflected light;

 applying the diffracted light such that the focal points of the ± 1 diffraction orders are offset from each other along the optical axis of the zeroth diffraction order with the focal point of the zeroth diffraction order being between the focal points of the ± 1 diffraction orders;

 increasing the diameter of at least the zeroth diffraction order at least in a direction substantially perpendicular to a track of the recording medium; and

 determining the position of at least one light spot formed by the zeroth diffraction order at first photo-detecting means divided at least in a direction substantially perpendicular to the track of the recording medium.

2. (original) A method for applying light from a light source to a recording medium and detecting the light reflected from the recording medium, according to Claim 1, the method further comprising the step of:

 determining the sizes of light spots formed by the ± 1 diffraction orders by second photo-detecting means and third photo-detecting means individually divided in a direction substantially parallel to the track of the recording medium.

3. (original) A method for applying light from a light source to a recording medium and detecting the light reflected from the recording medium, according to Claim 1, further comprising the step of:

determining the position of the light spot formed by the zeroth diffraction order at a plurality of the first photo-detecting means disposed in a direction substantially parallel to the track of the recording medium.

4. (original) An optical-data-detecting device for applying light from a light source to a recording medium and detecting the light reflected from a recording medium, the optical-data-detecting device comprising:

a holographic element for diffracting the reflected light and disposing the focal points of the ± 1 diffraction orders to be offset from each other along the optical axis of the zeroth diffraction order with the focal point of the zeroth diffraction order being between the focal points of the ± 1 diffraction orders;

an optical element for increasing the diameter of at least the zeroth diffraction order at least in a direction substantially perpendicular to a track of the recording medium; and

first photo-detecting means divided at least in a direction substantially perpendicular to the track of the recording medium, for determining the position of at least one light spot formed by the zeroth diffraction order.

5. (original) An optical-data-detecting device for applying light from a light source to a recording medium and detecting the light reflected from a recording medium, according to Claim 4, the optical-data-detecting device further comprising:

second photo-detecting means and third photo-detecting means individually divided in a direction substantially parallel to the track of the recording medium, for determining the sizes of light spots formed by the ± 1 diffraction orders.

6. (original) An optical-data-detecting device for applying light from a light source to a recording medium and detecting the light reflected from a recording medium, according to Claim 4, wherein a plurality of the first photo-detecting means for determining the position of the light spot formed by the zeroth diffraction order are disposed in a direction substantially parallel to the track of the recording medium.

7. (original) An optical-data-detecting device for applying light from a light source to a recording medium and detecting the light reflected from a recording medium, according to Claim 4, wherein the optical element comprises a flat plate which is inclined with respect to the optical axis of the light reflected from the recording medium.

8. (original) An optical-data-detecting device for applying light from a light source to a recording medium and detecting the light reflected from a recording medium, according to Claim 7, the optical-data-detecting device further comprising:

rotation means for rotating the flat plate about the optical axis of the light reflected from the recording medium.

9. (original) An optical-data-detecting device for applying light from a light source to a recording medium and detecting the light reflected from a recording medium, according to Claim 4, wherein the optical element reflects the light from the light source, applies the reflected

light to the recording medium, and transmits the light which has been reflected by the recording medium.

10. (original) A reading-writing apparatus for optical data, which performs at least one of reading and writing of the optical data with light from a light source being applied to a recording medium, the reading-writing apparatus comprising:

a holographic element for diffracting the light reflected by the recording medium and disposing the focal points of the ± 1 diffraction orders to be offset from each other along the optical axis of the zeroth diffraction order with the focal point of the zeroth diffraction order being between the focal points of the ± 1 diffraction order;

an optical element for increasing the diameter of at least the zeroth diffraction order at least in a direction substantially perpendicular to a track of the recording medium;

first photo-detecting means divided at least in a direction substantially perpendicular to the track of the recording medium, for determining the position of at least one light spot formed by the zeroth diffraction order; and

control means for controlling the relative position between the track of the recording medium and the light applied to the track of the recording medium by using a differential output from the first photo-detecting means.

11. (original) A reading-writing apparatus, which performs at least one of reading and writing of the optical data with light from a light source being applied to a recording medium, according to Claim 10, further comprising:

second photo-detecting means and third photo-detecting means individually divided in a direction substantially parallel to the track of the recording medium, for determining the sizes of light spots formed by the ± 1 diffraction orders,

wherein said control means determines the focal point of the light applied to the recording medium by using an output from the second photo-detecting means and the third photo-detecting means.

12. (original) A reading-writing apparatus, which performs at least one of reading and writing of the optical data with light from a light source being applied to a recording medium, according to Claim 10, wherein a plurality of the first photo-detecting means for determining the position of the light spot formed by the zeroth diffraction order are disposed in a direction substantially parallel to the track of the recording medium.

13. (original) A reading-writing apparatus, which performs at least one of reading and writing of the optical data with light from a light source being applied to a recording medium, according to Claim 10, wherein the optical element comprises a flat plate which is inclined with respect to the optical axis of the light reflected from the recording medium.

14. (original) A reading-writing apparatus, which performs at least one of reading and writing of the optical data with light from a light source being applied to a recording medium, according to Claim 13, further comprising:

rotation means for rotating the flat plate about the optical axis of the light reflected from the recording medium.

15. (original) A reading-writing apparatus, which performs at least one of reading and writing of the optical data with light from a light source being applied to a recording medium, according to Claim 13, wherein the optical element reflects the light from the light

source, applies the reflected light to the recording medium, and transmits the light which has been reflected by the recording medium.

16-27. (canceled)